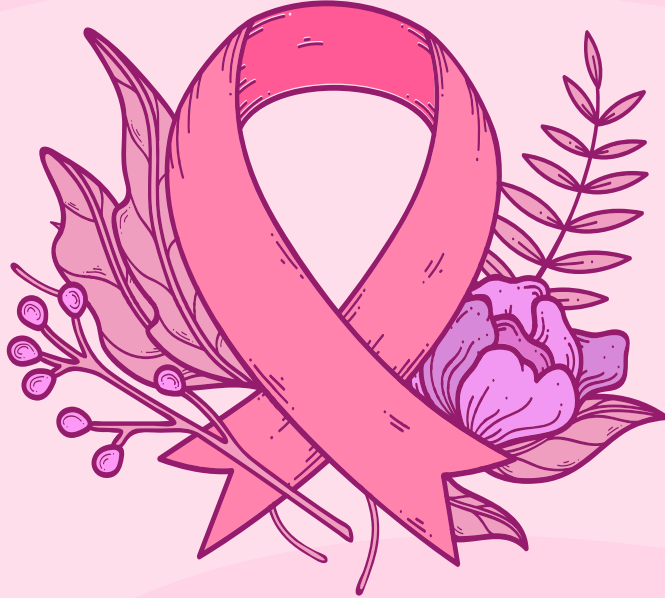


DISSERTATION REPORT 2021



KNOWLEDGE, ATTITUDE & PRACTICE TOWARDS BREAST CANCER AND CANCER SCREENING METHODS AMONG WOMEN IN PUNJAB, INDIA

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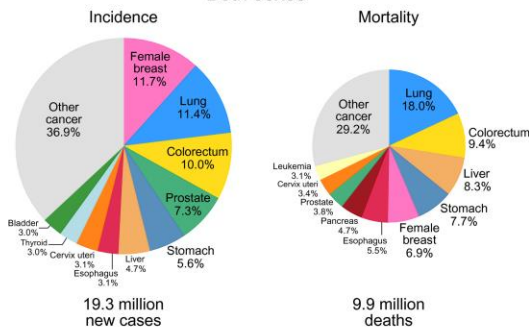
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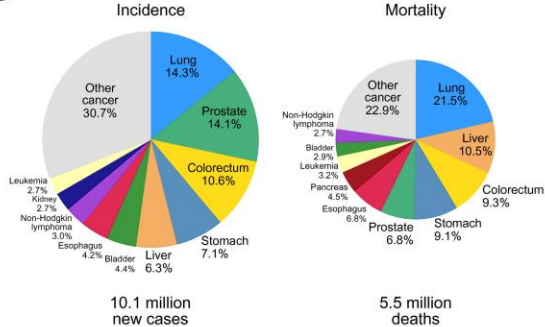
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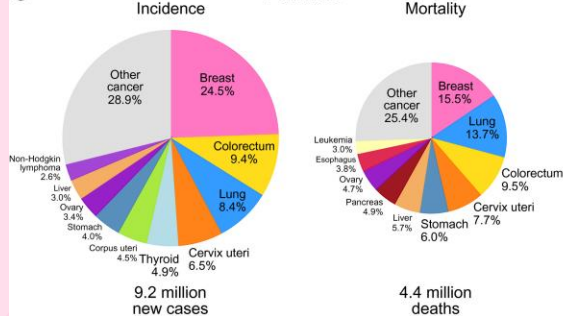
A Both sexes



B Males



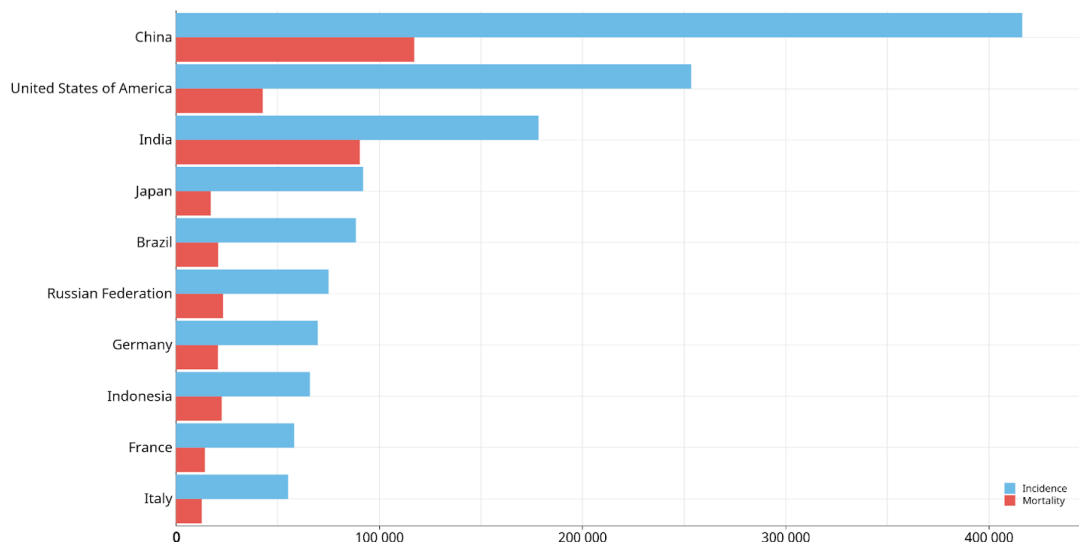
C Females



World Cancer Burden

- One in five people worldwide is estimated to contract cancer in their lifetime, and one in eight men and one in eleven women die of it.
- IARC (International Agency for Research on Cancer) released data for the year 2020 and found that there were 19.3 million cancer cases and 10 million cancer deaths worldwide.

Estimated number of incident cases and deaths breast, all ages



Data source: Globocan 2020
Graph production: Global Cancer Observatory (<http://gco.iarc.fr>)

International Agency for Research on Cancer
World Health Organization

Source- GLOBOCAN 2020

An online database for breast cancer statistics

Breast Cancer in India and Punjab

- Breast cancer accounts for 14% of cancers in Indian women.
- In India, cancer registries are a primary source for cancer occurrence related data in the form of PBCR's (36) and HBCR's (236) under the National Cancer Registry Programme (NCRP)
- Average age at breast cancer diagnosis is 10 years younger in Indian women than women in Western countries.
- According to the Population-Based Cancer Registry (PBCR) of Chandigarh (the capital city), the prevalence of breast cancer in Chandigarh is the highest in the country, at 35 per one lakh women.
- According to the Punjab government study, the Malwa region of the state - commonly known as the cancer belt - has the highest average of 136 cancer patients per 1 lakh people. Cancer incidence in the four districts of Malwa that include Sri Muktsar Sahib, Mansa, Bhatinda and Ferozpur was 107 per 100,000 in this area, which raised concerns.

Estimated numbers from 2020 to 2040, Females, age [0-85+]

India
Annual percentage change: Breast: 1.5%

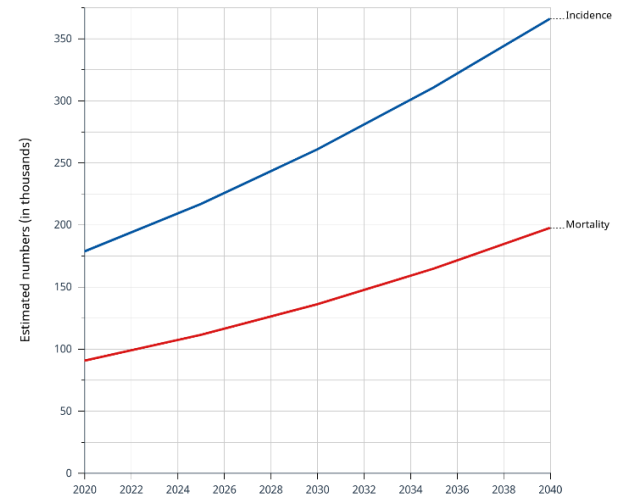
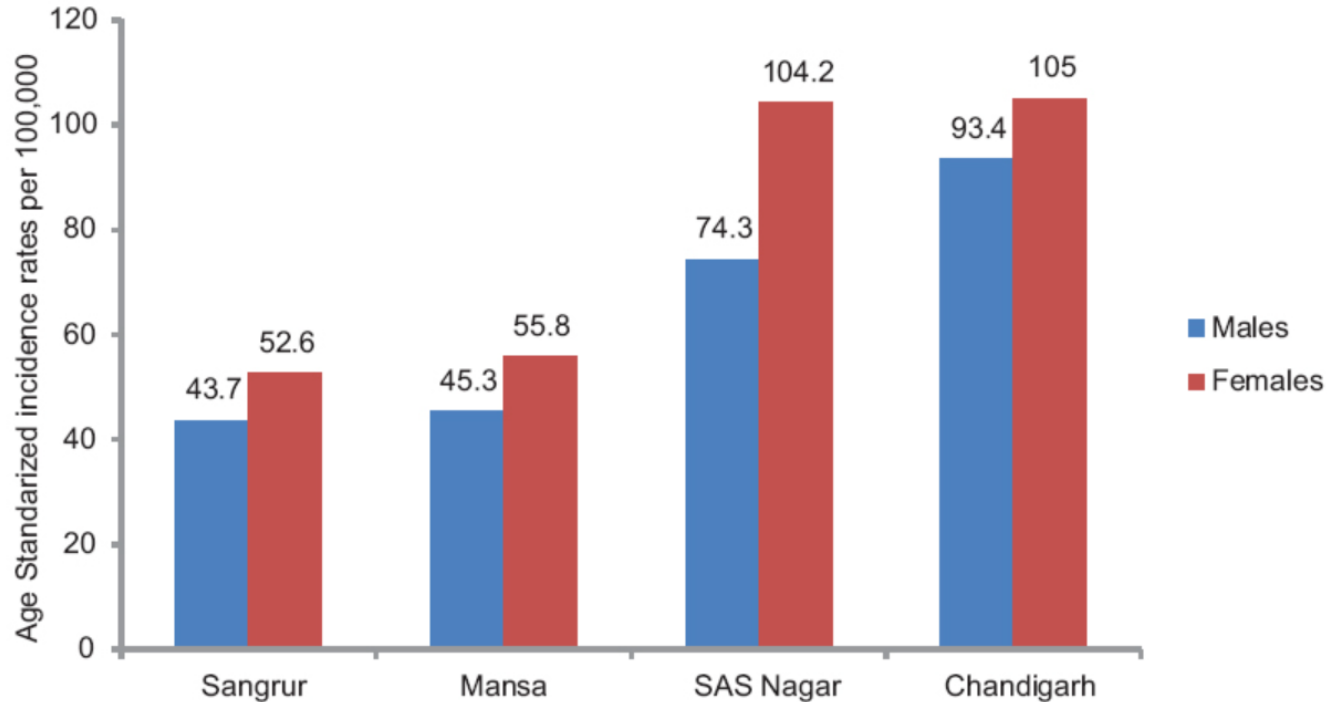


Figure 1: Age-standardized incidence rates, males and females, of all site cancers in the four population-based cancer registries of Punjab and Chandigarh, 2013



Urban-rural differences in cancer incidence and pattern in Punjab and Chandigarh: Findings from four new population-based cancer registries in North India Thakur J S, Budukh A, Kapoor R, Malhotra P, Bashar MA, Kathirvel S, Dixit R, Arora P, Bhatia S, Badwe R A - Int J Non-Commun Dis [Internet]. [cited 2021 Jul 3]. Available from: https://www.ijncd.org/article.asp?issn=2468-8827;year=2017;volume=2;issue=2;page=49;epage=55;aulast=Thakur;aid=IntJNon-CommunDis_2017_2_2_49_211072

Research Question

1. Do women residing in Punjab have enough knowledge about breast cancer and its attributes like- common signs and symptoms and screening methods like BSE, CBE and Mammography?
2. What is the general perception of women towards breast cancer and are they motivated to gain knowledge? If yes, what is their preferred mode of communication?
3. What percentage of women actually practice self-screening modalities (BSE) or visit a physician for regular clinical assessment (CBE and Mammography)?

Research Objectives

To assess the knowledge, attitude and practice of breast cancer and its early detection methods (Breast Self-Examination, Clinical Breast Examination and Mammography) amongst women from diverse sections of society currently residing in Punjab region, between 18-55 years of age.



Literature Review



- Knowledge of BSE among Indian women is 61.2%, among urban women is 78% then rural women only 22%. 56% know that BSE should be done monthly.
- 98.5% of women think complete cure is possible and there was a 100% positive attitude of women towards BSE. (Khan et al 2021)



- On observing the practice of screening methods in study participants, 14 studies reported that only 27.37% of the women practiced BSE, while practice of CBE and mammography was even lower than that, i.e., 16.71% and 7.12%, respectively.
- 71.10% of the study participants had positive attitude toward breast cancer screening. (Pal et al 2021)



- Of the 237 women who participated in the study, 89.1% (237) were familiar with BC, while only 77 (28.5%) were familiar with BSE.
- Before educational intervention, only 7.14% of the women practiced BSE. The increase in percentage is statistically significant after the intervention at 64.7%. (B Nisha, Ramachandran Murali 2020)



Major source of information- Media (71%), Friends/relatives (47%), Health workers/nurses/doctors (31%), Public and social events (19%), Schools/colleges (17%), Religious institutions (14%) and Accredited Social Health Activist (ASHA)/Auxiliary Nurse Midwife (ANM) (8%)- low (Oswal et al 2020)

Methodology

Study type	Descriptive Cross Sectional Study
Study area	Punjab
Sampling method	Consecutive Sampling
Sample size	Minimum Required- 264 (at 95% CI and 5% margin of error) Collected- 291
Inclusion Criteria	Women residing in Punjab including the capital city Chandigarh between 18- 55 years of age.
Exclusion Criteria	1. Women who are already diagnosed with breast cancer and are under treatment, or pregnant women or lactating women will be excluded from the study. 2. Women from outside Punjab state 3. Women less than 18 or more than 55 years of age
Study tool	Structured self-administered online questionnaire having four sections- (total 36 questions) a) Socio-economic background of the participants b) Knowledge about breast cancer signs & symptoms and various modes of early detection i.e., Breast self-examination, Clinical breast examination and Mammography c) Practice of early detection methods d) Perception/ attitude towards breast cancer

Results

- A total of 291 women responded to our online questionnaire.
- 25 women were pregnant, lactating or already diagnosed with breast cancer
- Finally, 266 responses were included in the analysis.

Socio-demographic characteristic	Number of respondents	Valid Percentage	Cumulative percentage
Respondent's age[^]			
18- 25 years	58	27.6	27.6
26- 35 years	79	37.6	65.2
36- 45 years	43	20.5	85.7
46-55 years	30	14.3	100.0
Marital status[^]			
Married	141	53	53
Single	107	40.2	93.2
Divorced/ Separated	7	3.4	96.6
Widowed	9	3.4	100.0
Religion[^]			
Hindu	127	47.7	47.7
Sikh	123	46.2	93.9
Other	16	6.1	100.0
Education			
Illiterate	9	3.4	3.4
Primary level	66	24.8	28.2
Secondary level	49	18.4	46.6
Graduate	82	30.8	77.4
Post graduate	60	22.6	100.0
Occupation			
Student	43	16.2	16.2
Housewife	91	34.2	50.4
Self employed	33	12.4	62.8
Currently unemployed	27	10.2	72.9
Employed (Govt. or private job)	72	27.1	100.0
Average monthly family income[^]			
Less than 10,000	82	31.2	31.2
10,000- 50,000	82	31.2	62.4
50,000- 1 lakh	57	21.7	84.0
>1 lakh	42	16.0	100.0

[^]Missing values found in these sections and hence the second column 'Valid percentage' is percentage calculated for the available responses only

Table 1: Participant sociodemographic characteristics (n=266)

Knowledge of breast cancer symptoms and screening methods

Parameter	Poor knowledge (<40%)	Average knowledge (40-60%)	Good knowledge (60-80%)	Excellent knowledge (>80%)
1. Total knowledge score				
Frequency	100	67	66	33
Percentage	37.6	25.2	24.8	12.4
1. Knowledge of breast cancer symptoms				
Frequency	49	120	60	37
Percentage	18.4	45.1	22.6	13.9
1. Knowledge of breast cancer screening methods				
Frequency	123	54	59	30
Percentage	46.2	20.3	22.2	11.3

- ❖ The score range obtained was from 0 to 34, with 3 participants getting a perfect score of 34.
- ❖ The mean score calculated was 18 (52.9% knowledge) and hence lies in the average knowledge category.
- ❖ 48% of participants (n=127) were aware about Breast self-examination and out of these 65% (n=82) knew how it is performed.
- ❖ While 39% of participants (n=102) knew about Clinical breast examination. Out of these 39% women only 45% knew how CBE is performed.
- ❖ At the same time, 61% women (n=163) were aware about mammography.

Knowledge of breast cancer symptoms and screening methods

Bivariate analysis of total knowledge score against sociodemographic characteristics of women in Punjab (n=264)

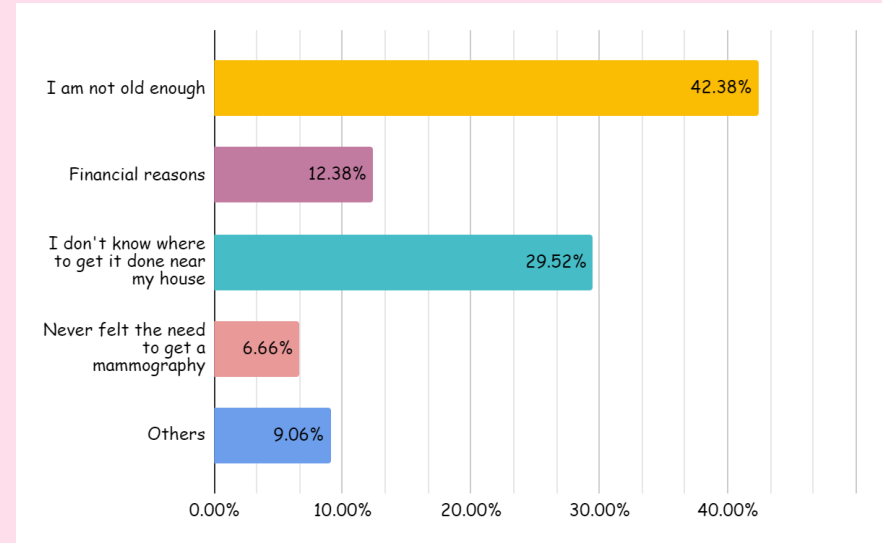
			Total knowledge score				
			Poor	Average	Good	Excellent	Total
Education*	Illiterate	Count Percentage	6 6%	1 1.5%	2 3%	0 0%	9 3.4%
	Primary level	Count Percentage	41 41%	15 22.4%	8 12.1%	2 6.1%	66 24.8%
	Secondary level	Count Percentage	24 24%	14 20.9%	9 13.6%	2 6.1%	49 18.4%
	Graduate	Count Percentage	19 19%	20 29.9%	26 39.4%	17 51.5%	82 30.8%
	Post graduate	Count Percentage	10 10%	17 25.4%	21 31.8%	12 36.4%	60 22.6%
Occupation*	Student	Count Percentage	13 13%	11 16.4%	14 21.2%	5 15.2%	43 16.2%
	Housewife	Count Percentage	51 51%	21 31.3%	13 19.7%	6 18.2%	91 34.2%
	Self employed	Count Percentage	9 9%	8 11.9%	9 13.6%	7 21.2%	33 12.4%
	Currently unemployed	Count Percentage	7 7%	10 14.9%	7 10.6%	3 9.1%	27 10.2%
	Employed (Govt. or private job)	Count Percentage	20 20%	17 25.4%	23 34.8%	12 36.4%	72 27.1%
Average monthly family income*	Less than 10,000	Count Percentage	61 61%	13 20.3%	5 7.6%	3 9.1%	82 31.2%
	10,000- 50,000	Count Percentage	21 21%	26 40.6%	24 36.4%	11 33.3%	82 31.2%
	50,000- 1 lakh	Count Percentage	14 14%	16 25%	21 31.8%	6 18.2%	57 21.7%
	>1 lakh	Count Percentage	4 4%	9 14.1%	16 24.2%	13 39.4%	42 16%

- ❖ While age, marital status and religion were not significant.
- ❖ Knowledge of breast cancer symptoms and screening methods correlated significantly with education level of respondents ($p=0.00$), occupation ($p=0.009$) and average monthly family income ($p=0.00$).
- ❖ In terms of education level, it was observed that 47% of participants scoring a poor knowledge score belonged to the illiterate and primary school level category.
- ❖ Participants with maximum poor scores were housewives (51%) and maximum excellent scores were employed women (36.4%).
- ❖ While 61% of women getting poor knowledge scores were from the least economic group earning less than 10,000 rupees a month, most of the women earning excellent scores i.e. 39.4% were from uppermost economic strata with average income of more than Rs 1 lakh.

Practise of breast cancer screening methods

Table 5- Practise of breast cancer screening methods among women in Punjab (n=266)			
Parameter	Yes	No	Not responded
Practise Breast self-examination			
Frequency	95	165	6
Percentage	35.7	62.0	2.3
Practise Clinical breast examination			
Frequency	42	222	2
Percentage	15.8	83.5	0.8
Practise Mammography			
Frequency	42	222	2
Percentage	15.8	83.5	0.8

Figure : Reasons for never getting a mammography



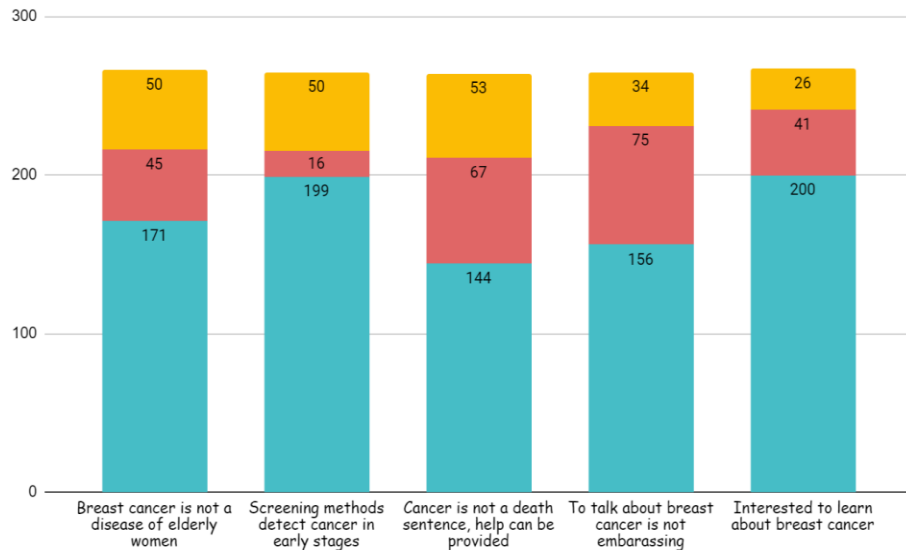
- ❖ Overall practise of breast cancer screening was found to be very low among the women participants.
- ❖ Only 35.7% women had ever performed a breast self-examination while 62% women never did a BSE for themselves.
- ❖ The practise of CBE and Mammography was much lower with only around 16% participants reporting that they had ever performed a CBE or Mammography for themselves
- ❖ We also observe that 95% of women who responded small age as a reason for not getting a mammography done were less than 45 years of age

Bivariate analysis of practise of screening methods against sociodemographic characteristics (n=266)								
			Practise BSE		Practise CBE		Practise Mammography	
			Yes	No	Yes	No	Yes	No
Age of respondent	18-25 yr.	Count Percentage	23 25%	34 30.4%	4* 9.8%	53* 31.7%	3* 7.7%	54* 32%
	26- 35 yr.	Count Percentage	30 32.6%	47 42%	13* 31.7%	66* 39.5%	9* 23.1%	70* 41.4%
	36-45 yr.	Count Percentage	20 21.7%	21 18.8%	13* 31.7%	29* 17.4%	14* 35.9%	28* 16.6%
	46-55 yr.	Count Percentage	19 20.7%	10 8.9%	11* 26.8%	19* 11.4%	13* 33.3%	17* 10.1%
Marital Status	Married	Count Percentage	48 51.1%	89 54.3%	30* 73.2%	110* 49.8%	34* 81%	106* 48.2%
	Single	Count Percentage	42 44.7%	63 38.4%	9* 22%	97* 43.9%	5* 11.9%	101* 45.9%
	Divorced/ Separated	Count Percentage	2 2.1%	5 3%	1* 2.4%	6* 2.7%	1* 2.4%	6* 2.7%
	Widowed	Count Percentage	2 2.1%	7 4.3%	1* 2.4%	8* 3.6%	2* 4.8%	7* 3.2%
Religion	Hindu	Count Percentage	36* 38.3%	88* 53.3%	12* 28.6%	113* 51.1%	7* 16.7%	118* 53.4%
	Sikh	Count Percentage	55* 58.5%	65* 39.4%	28* 66.7%	95* 43%	33* 78.6%	90* 40.7%
	Others	Count Percentage	3* 3.2%	12* 7.3%	2* 4.8%	13* 5.9%	2* 4.8%	13* 5.9%
Education	Illiterate	Count Percentage	2* 2.1%	7* 4.2%	1 2.4%	8 3.6%	1 2.4%	8 3.6%
	Primary level	Count Percentage	12* 12.6%	54* 32.7%	9 21.4%	57 25.7%	14 33.3%	52 23.4%
	Secondary level	Count Percentage	13* 13.7%	33* 20%	8 19%	40 18%	8 19%	40 18%
	Graduate	Count Percentage	42* 44.2%	39* 23.6%	16 38.1%	66 29.7%	14 33.3%	68 30.6%
	Post graduate	Count Percentage	26* 27.4%	32* 19.4%	8 19%	51 23%	5 11.9%	54 24.3%

Occupation	Student	Count Percentage	17* 17.5%	26* 15.8%	4 9.5%	39 17.6%	3 7.1%	40 18%
	Housewife	Count Percentage	21* 22.1%	68* 41.2%	17 40.5%	74 33.3%	14 33.3%	77 34.7%
	Self employed	Count Percentage	17* 17.9%	15* 9.1%	6 14.3%	26 11.7%	8 19%	24 10.8%
	Currently unemployed	Count Percentage	10* 10.5%	15* 9.1%	4 9.5%	22 9.5%	5 11.9%	21 9.5%
	Employed (Govt. or private job)	Count Percentage	30* 31.6%	41* 24.8%	11 26.2%	61 27.5%	12 28.6%	60 27%
Average monthly family income	Less than 10,000	Count Percentage	8* 8.4%	72* 44.4%	4* 9.5%	76* 34.7%	1* 2.4%	79* 36.1%
	10,000- 50,000	Count Percentage	39* 41.1%	41* 25.3%	15* 35.7%	67* 30.6%	19* 45.2%	63* 28.8%
	50,000- 1 lakh	Count Percentage	23* 24.2%	32* 19.8%	14* 33.3%	43* 19.6%	15* 35.7%	42* 19.2%
	>1 lakh	Count Percentage	25* 26.3%	17* 10.5%	9* 21.4%	33* 15.1%	7* 16.7%	35* 16%
	*p value<0.05 Percentage mentioned are column percentages							

Most of the women who had ever done BSE were those from 26-35 yr. age group (32.6%), were married (51%), were Sikh (58.5%), were graduates (44.2%), were employed (31.6%) and belonged to middle income group strata (average monthly income between 10-50 thousand) (41.1%).

Maybe/ I am not sure Disagree Agree



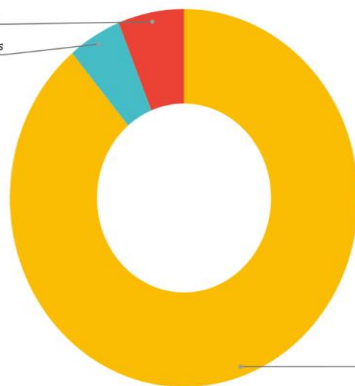
Attitude towards breast cancer

Table 7: Total attitude score of women participants towards breast cancer in Punjab (n=266)

Total attitude score	Frequency	Percentage
Positive attitude (Score +10 to +2)	204	77.3
Neutral (Score 0)	30	11.4
Negative attitude (Score -2 to -10)	30	11.4

- ❖ The mean total attitude score was found to be 3.82 which is on the positive side.
- ❖ Majority of the women 77.3% had a positive attitude towards breast cancer while 11.4% women each had either neutral or negative attitude.

I would do nothing, it will get better on its own
6.1%
I would use home remedies to manage symptoms
5.0%



Participant responses for what would you do if you detect any recent abnormalities or changes in breast?

I would consult a doctor
88.9%

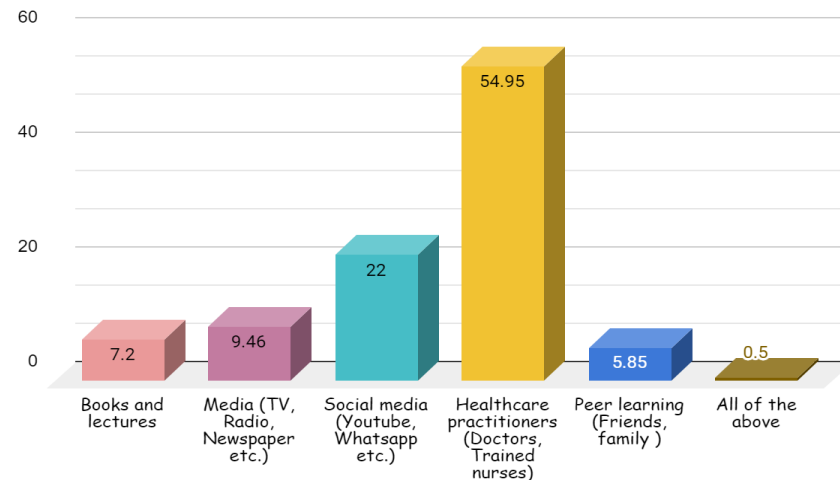
Bivariate analysis of total attitude score across sociodemographic characteristics of women in Punjab (n=266)					
			Total attitude score		
			Negative attitude	Neutral	Positive attitude
Education*	Illiterate	Count Percentage	3 10%	0	6 2.9%
	Primary level	Count Percentage	16 53.3%	13 43.3%	37 18.1%
	Secondary level	Count Percentage	4 13.3%	9 30%	35 17.2%
	Graduate	Count Percentage	4 13.3%	8 26.7%	70 34.3%
	Post graduate	Count Percentage	3 10%	0	56 27.5%
Occupation*	Student	Count Percentage	5 16.7%	5 16.7%	33 16.2%
	Housewife	Count Percentage	22 73.3%	15 50%	54 26.5%
	Self employed	Count Percentage	1 3.3%	1 3.3%	30 14.7%
	Currently unemployed	Count Percentage	1 3.3%	3 10%	22 10.8%
	Employed (Govt. or private job)	Count Percentage	1 3.3%	6 20%	65 31.9%
Average monthly family income*	Less than 10,000	Count Percentage	25 83.3%	19 65.5%	36 17.8%
	10,000- 50,000	Count Percentage	3 10%	7 24.1%	72 35.6%
	50,000- 1 lakh	Count Percentage	1 3.3%	3 10.3%	53 26.2%
	>1 lakh	Count Percentage	1 3.3%	0	41 20.3%

*p value<0.05

Percentages mentioned are in terms of column percentage

- ❖ Education, occupation and average monthly family income were significant for total attitude score (p value=0.00).
- ❖ In terms of level of education, 63% of women with negative attitude were from the lower educational level category (10% illiterate and 53% primary level educated).
- ❖ On the other hand, among the group of women with positive attitude, a majority 61% of them had a good educational background (34% graduate and 27.5% post graduate).

Preferred mode of information dissemination among women respondents from Punjab (n=222)

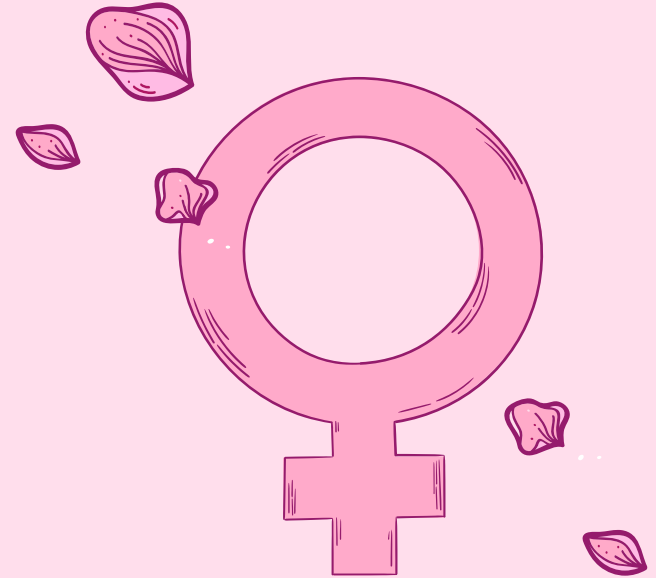


Discussion

- ❖ Our study indicated that about 42% of women from Punjab were confident that they will be able to examine their breasts for any recent change or abnormality. But when asked about the specific symptoms, many were not aware of some of the most common symptoms like three-fourth women were not able to identify a redness, ulcer or peeling skin over breast as a symptom and almost half of the women responders were not able to correctly identify a family history of breast cancer as a risk factor.
- ❖ 3/4th of the enrolled participants felt that regular screening and methods like BSE, CBE and Mammography helps to detect cancer in early stages.
- ❖ The development of community-based programs aimed at selected small groups of women at the local level should be promoted, in order to not only disseminate information and techniques about BSE under supervision, but also ensure privacy and comfort.
- ❖ Additionally, there is no regular screening program in place. According to another study, currently in India only 30% physicians (PG's and UG's) prefer to provide regular breast cancer screening while around 44% offer it on demand. We need to encourage doctors and other healthcare workforce to educate incoming patients and make them aware about breast cancer.
- ❖ Educating women about BSE should be mandatory. In addition to educating about the correct technique of BSE, campaigns and movements promoting a healthy attitude and practice should be held at regular intervals.
- ❖ We can introduce the 'BSE charting' method, similar to menstrual cycle charting, which will ensure that the BSE is conducted each month after menstruation.
- ❖ Policymakers should leverage positive attitude of women and organise community awareness programs. Social media like Facebook, WhatsApp and other media sources (TV, radio) could be leveraged to share breast cancer awareness among masses. Additionally, doctors (including dentists, ayurvedic and homeopathic practitioners) and nurses should be provided regular training about cancer, its detection and treatment
- ❖ >50% women wanted healthcare practitioners to be their source of information, so do we have enough workforce to cater to them is important.

Conclusion

- Despite being a growing economy, India has not yet developed the infrastructure and resources that allow early detection of breast cancer to be readily available across the country.
- Moreover, the prohibitive cost makes it out of reach for the average woman.
- Thus, BSE becomes of particular importance in resource-poor, third world countries like India and can serve as an easy, cost-effective, and self-sufficient method for the early detection of breast cancer.
- Eventually training manpower to disseminate awareness and generate knowledge among women will definitely prove to be a step in the right direction.



Early detection saves lives

Thankyou

